

REMARKS

Reconsideration of this application is respectfully requested.

It is initially noted that the Examiner has only acted on twelve claims when there are thirteen claims pending in this application by virtue of an amendment filed December 23, 1999 during the International PCT Chapter II phase of this application. The preliminary amendment of November 24, 1998 eliminated multiple claim dependencies for the original PCT claims -- which were later superceded by the December 23, 1999 amendment at the international level.

A copy of the IPER and the PCT Chapter II amended claims is believed to have been received by the USPTO via the usual WIPO channel (and/or by applicant's February 25, 2000 filing). A copy of the amended sheets of claims 1-13 is attached for the Examiner's convenience.

The applicant also calls attention to the Supplemental Preliminary Amendment and Information Disclosure Statement filed June 12, 2001. This amendment eliminated multiple claim dependencies for the new PCT Chapter II amended claims by supplementing the earlier November 24, 1998 preliminary amendment. A copy of the IDS together with the Form PTO-1449 and a postcard receipt from the USPTO acknowledging receipt of such material (as well as receipt of a copy of each cited

reference) is also attached for the Examiner's convenience. Return of a fully initialed copy of the Form PTO-1449 is respectfully requested.

The rejection of claims 1-6 and 8-12 under 35 U.S.C. §103 as allegedly being made "obvious" based on Perlin '380 in view of Durward '691 is respectfully traversed.

the present invention is concerned with the arrangement of a distributed virtual environment on a client/server basis. The usual present day implementation of a shared virtual environment places a local copy of the common environment with each client. The state and behavior are characteristics held at each client and modified at the instigation of that client, such changes then being transmitted to all other clients in the system.

The Perlin reference does not address the difficulties referred to in applicant's specification, and indeed does not relate to a client/server system at all.

The Durward client/server virtual reality system appears to be of the type described in the prior art in which the current state is downloaded to the user (step 314, Figure 7) and update data is received from the user (step 326).

The specific requirements of claim 1, that the conceptual model and dynamic model managers are carried by the server apparatus and the visual model manager is carried by the client apparatus is not addressed by either of the prior art references. Durward simply describes a distributed virtual reality system in which no separation of

entity models between the client and the server is envisaged -- the entire model appears to be carried by each client and updated to the server and thus to the other clients whenever one of the clients makes a change as in the acknowledged prior art. In Perlin there is no mention of a client server arrangement at all.

Thus if one were to somehow "combine" the disclosures of the two references, one would presumably arrive at a multi-level model of the type described in Perlin, in which messages were transmitted regarding changes to the models to a client server system as in the Durward arrangement, but in which all levels of the models would be handled by the individual clients. However, in the applicant's claimed invention the conceptual and dynamic levels of the model are handled centrally, and only the visual model is handled at the client level.

Referring to the International Preliminary Examination Report, at paragraph 1.8 the Report states that the separation of managers for the different properties of objects (i.e., the handling of some managers at the client and some of the server) is nowhere disclosed, discussed or suggested in any of the prior art referred to in the International Preliminary Examination Report. None of the prior art now cited by the Examiner goes any further towards making such a suggestion.

In view of the above discussion for independent claim 1, it is not believed necessary to further discuss dependent claims 2-6 and 8 which add yet further patentable distinction to the claimed invention.

As the Examiner has already recognized, independent claims 9 and 10 bear certain similarities to claim 1. Since the deficiencies of the cited references have already been noted above with respect to claim 1, claims 9 and 10 are also believed to be patentably distinguished from the cited art for similar reasons.

Independent method claim 11 requires mutually independent conceptual, dynamic and visual entity models with messages being allowed for transmission between the conceptual model manager and one or more dynamic model managers and one or more visual model managers. Such is not seen to be in any way suggested by the cited references.

Claim 12 depends from claim 9 and simply adds additional patentable distinction.

The rejection of claim 7 under 35 U.S.C. §103 as allegedly being made "obvious" based on Perlin '380 in view of Durward '691 and further in view of "applicant's admitted prior art" is also respectfully traversed.

The fundamental deficiencies of both the primary and secondary references have already been noted above for parent claims to claim 7. Clearly applicant is not claiming to be the first to ever provide multi-cast addresses in any environment. However, when dependent claim 7 is considered "as a whole" (as it must be under 35 U.S.C. §103), then it clearly adds further patentable distinction to the overall claimed combination.

Claim 13 depends from claim 10 and is also believed to add further patentable distinction.

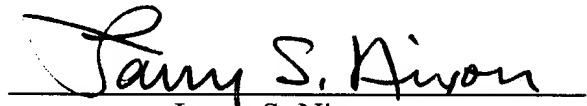
Accordingly, all pending claims 1-13 are now believed to be in allowable condition and a formal Notice to that effect is respectfully solicited.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph beginning at page 7, line 4:

Figures 7[a]A and 7[b]B illustrate two examples of the subdivision of the virtual environment into zones;

The paragraph beginning at page 7, line 11:

Figure 12 illustrates collision between two dynamic representative objects at a zone boundary; [and]

The paragraph beginning at page 27, line 10:

An example of this approach to forming client connection is illustrated in Figures 14a-14d.